IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	Alain D. Sismondi et al.	Examiner: Bruce Hess
Serial No.:	09/643,026	Group Art Unit: 1774
Filed:	August 21, 2000	Docket: 01006US01
Title:	INK-JET PRINTING RECEIVING SHEET COMPRISING GELATIN AND A METAL SALT	

DECLARATION OF ALAIN D. SISMONDI UNDER 37 C.F.R. 1.132

I, Alain D. Sismondi do state and declare as follows:

1. My name is Alain Dominique Maurice Sismondi.

2. My technical background is as follows:

In 1989, I received a Doctor's Degree in Chemistry at the Mediterranean Polytechnics Institute, University of Nice Sofia Antipolis, France, where I have worked for French government on high fluorinated surfactants as agent for polymerizable vesicular systems that provide drug encapsulation and delivering. The results has been published in Journal of Fluorine Chemistry,59 (1992) 127-13; in Tenside Surfactants Detergents, 29/3(1992)166-168 & 29/5(1992)333-336. I have been designated as inventor in one granted US patent.

In 1993, I joined 3M Research in the R&D laboratory at Ferrania, Italy and I have worked on black & white photographic emulsions and films for Medical Imaging Systems Application. I have been designated as inventor in two granted US patents.

Since 1998 I have worked on inkjet media development programs and I have been designated as inventor in two granted US patents on inkjet media technologies.

I am presently an employee of Ferrania, S.p.A., with the qualification of R&D Film Formulation Specialist.

3. I am familiar with U.S. Patents Nos. 5,320,897; 4,649,064; 4,740,420; and 4,946,781 which were cited in the Office Action mailed February 26, 2004 in U.S. Patent Application Serial No. 09/643,026.

4. I personally performed the following comparative work to show a comparison of technology claimed in this application (comparison with higher pH levels outside the scope of claims) with practices in the prior art (reference).

Sample 14 (reference).

A receiving ink jet sheet was prepared using a support comprising a paper base having a weight of 170 g/m^2 on which a resin portion having a weight of 25 g/m^2 of low density polyethylene was coated on both sides. A gelatin primer was coated on the front side and an anticurl gelatin layer was coated on the back side.

Three coating solutions were prepared using the components indicated below dissolved in water. The solutions were adjusted to pH 4.0 using nitric acid before coating them all at once with extrusion system at 10.6 meter by minute on the front side of the aforementioned support.

The resulting coating was dried to give a multilayer inkjet receiving sheet with the following composition:

First layer:

1.88g/m^2 of gelatin; 0.30g/m^2 of Glucidex-19, a polysaccharide available from Roquette, 0.53 g/m^2 of PVP-K 90 and 0.04 g/m^2 of Triton X 100;

Second layer: 3.75 g/m^2 of gelatin, 1.05 g/m^2 of PVP-K 90, 0.60 g/m^2 of Glucidex-19, 0.08 g/m^2 of Triton X 100, and 0.08 g/m^2 of fine particles of aluminum oxide;

Third layer: 0.47 g/m^2 of gelatin, 0.23 g/m^2 of PVP-K 90, 0.08 g/m^2 of Glucidex-19, 0.07 g/m^2 of Zonyl FSN 100, 0.06 g/m^2 of P.M.M.A. and 0.04 g/m^2 of cross-linking agent H-1.

Sample 15 (comparison).

The procedure of sample 14 was repeated with the same ingredients, except that 0.200 g/m^2 of $Ca(NO_3)_2.4H_2O$ were added to the first layer and 0.400 g/m^2 of $Ca(NO_3)_2.4H_2O$ in the second layer.

Sample 16 (comparison).

The procedure of sample 14 was repeated with the same ingredients, except that 0.128 g/m^2 of $ZnSO_4.7H_2O$ were added to the first layer and 0.246 g/m^2 of $ZnSO_4.7H_2O$ in the second layer.

Sample 17 (comparison).

The procedure of sample 14 was repeated with the same ingredients, except that 0.096 g/m^2 of $ZnSO_4.7H_2O$ and 0.050 g/m^2 of $Ca(NO_3)_2.4H_2O$ were added to the first layer and 0.185 g/m^2 of $ZnSO_4.7H_2O$ and 0.100 g/m^2 of $Ca(NO_3)_2.4H_2O$ were added to the second layer

Sample 18 (comparison).

The procedure of sample 14 was repeated with the same ingredients, except that 0.064 g/m^2 of $ZnSO_4.7H_2O$ and 0.100 g/m^2 of $Ca(NO_3)_2.4H_2O$ were added to the first layer and 0.123 g/m^2 of $ZnSO_4.7H_2O$ and 0.200 g/m^2 of $Ca(NO_3)_2.4H_2O$ were added to the second layer

Sample 19 (comparison).

The procedure of sample 14 was repeated with the same ingredients, except that 0.032 g/m^2 of $ZnSO_4.7H_2O$ and 0.150 g/m^2 of $Ca(NO_3)_2.4H_2O$ were added to the first layer and 0.62 g/m^2 of $ZnSO_4.7H_2O$ and 0.300 g/m^2 of $Ca(NO_3)_2.4H_2O$ were added to the second layer

Sample 20 (comparison).

The procedure of sample 14 was repeated with the same ingredients, except that 0.108 g/m^2 of $MgSO_4.7H_2O$ were added to the first layer and 0.216 g/m^2 of $MgSO_4.7H_2O$ in the second layer.

Sample 21 (comparison).

The procedure of sample 14 was repeated with the same ingredients, except that 0.106 g/m^2 of $BaCl_2.2H_2O$ were added to the first layer and 0.212 g/m^2 of $BaCl_2.2H_2O$ in the second layer.

Samples 1 to 21 were printed and subjected to sweating and glossiness evaluation by using the same apparatus and procedures described in the specification of U.S. Patent Application Serial No. 09/643,026. The results are summarized in the following table.

Samples	Compound	mg/m^2		Acid	pH	Glossiness	Sweating	
		I Layer	II Layer				On Fresh	After Ageing
14 (Ref)	-	-	-	HNO_3	4.0	81	10	4
15 (Comp.)	$Ca(NO_3)_2.4H_2O$	200	400	HNO_3	5.1	52	10	10
16 (Comp.)	$ZnSO_4.7H_2O$	128	246	HNO_3	5.1	43	10	9
17 (Comp.)	$ZnSO_4.7H_2O$ / $Ca(NO_3)_2.4H_2O$	96 / 50	185 / 100	HNO_3	5.1	44	10	10
18 (Comp.)	$ZnSO_4.7H_2O$ / $Ca(NO_3)_2.4H_2O$	64 / 100	123 / 200	HNO_3	5.1	45	10	10
19 (Comp.)	$ZnSO_4.7H_2O$ / $Ca(NO_3)_2.4H_2O$	32 / 150	62 / 300	HNO_3	5.1	48	10	10
20 (Comp.)	$MgSO_4.7H_2O$	108	216	HNO_3	5.2	32	10	10
21 (Comp.)	$BaCl_2.2H_2O$	106	212	HNO_3	5.2	29	10	9

5. It is my best opinion that this data shows, in combination with the data in the specification of U.S. Patent Application Serial No. 09/643,026 that:

a. The recitations in the claims of U.S. Patent Application Serial No. 09/643,026 with regard to the surface pH of the compositions being below 5.0 is a meaningful limitation.

b. The data in the above table resulting from the work done by me shows that glossiness deteriorates at pH levels of 5.0 and above.

c. The data in the above table resulting from the work done by me shows that glossiness deteriorates at pH levels of 5.0 and above even in the presence of the hydrated sals, alone or in combination.

d. There was no teaching known from the references cited against the claims of U.S. Patent Application Serial No. 09/643,026 that suggest any materiality of surface pH levels as affecting gloss in layers such as those of the present claims in combination with the recited hydrated salts.

e. The subject matter of the claims in U.S. Patent Application Serial No. 09/643,026 is therefore believed by me to not be obvious or anticipated by any one of or combination of U.S. Patents Nos. 5,320,897; 4,649,064; 4,740,420; and 4,946,781.

6. Further Declarant Sayeth Not.

Signed this 10th day of May, 2004

At Ferrania, S.p.A., Savona, Italy

By_____.

Alain D. Sismondi